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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/038,276	01/02/2002	Shaun Pendo	047711-0280	6820

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EXAMINER

CROSS, LATOYA I

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/038,276

Applicant(s)

PENDO ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14 and 29-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14 and 29-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to Applicants' amendments filed on September 13, 2004. Claims 1, 3-14, 29-38 are pending.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 6-8, 10-13, 29-32 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,498,043 to Schulman et al.

Schulman et al teach a substrate sensor comprising electronic circuitry formed on opposite sides of a substrate. Figure 3B shows a sensor comprising circuitry (38) on one side of a substrate (36) and a sensor (44) on the other side of substrate (36) (col. 3, lines 21-33).

Schulman et al teach that the electrodes are connected to the sensor by way of stair-stepped vias that pass through the substrate (col. 2, lines 38-56). At col. 7, lines 38-41, Schulman et al teach that the vias function as hermetic feedthroughs. The reference further teaches that the vias are filled with a conductive material, as recited in claims 2 and 30 (col. 3, lines 41-44).

Further, Schulman teaches that multiple conductors interface with the circuitry on the top side of the substrate using multiple stair step feed throughs, as recited in claim 13 (col. 7, lines 20-29). With respect to claim 6, Shulman et al teach using a ceramic substrate (col. 7, lines 37-38).

Further, the reference teaches that the substrate may be coated with alumina (aluminum oxide),

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as recited in claim 7 (col. 7, lines 41-42). With respect to claims 8, 10 and 11 the reference teaches covering the sensor (cap 42) with a material such as alumina (col. 3, lines 7-15).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 3, 4, 9 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman et al in view of US Patent 6,414,835 to Wolf et al.

The disclosure of Schulman et al described above. Schulman et al fail to teach gold as the conductive material to fill the via.

Wolf et al teach implantable medical devices, similar to those disclosed by Schulman et al, having ceramic substrates with sensors and electrodes. Vias (62-68) form conductive paths throughout the substrate. Wolf et al teach the vias may be filled with conductive material such as gold-filled epoxies (col. 9, lines 42-65 and col. 14, line 65 – col. 15, line 3). Further, Wolf et al teach that the vias may be filled by conventional method such as laser cutting, drilling,

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punching, etc (col. 9, lines 42-50). Wolf et al also teach that the layered substrate may be laminated together. See (col. 10, lines 1-15 and figure 10, step S106).

Because Wolf et al teach the conventional use of gold as a conductive material to fill vias in implantable medical devices, it would have been obvious to one of ordinary skill in the art to use gold-filled material to fill the vias disclosed in Schulman et al to provide a conductive passageway through the ceramic substrate.

11. Claim 5 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulman '043 in view of US Patent 6,516,808 to Schulman.

The disclosure of Schulman '043 is described above. Schulman '043 differs from the instantly claimed invention in that there is no disclosure of the vias being filled with platinum conductive material.

Schulman '808 teaches an implantable device having a substrate having circuitry and electrically conductive vias. Schulman '808 teaches that the vias are formed of platinum to make the vias hermetic (col. 8, lines 16-29). It would have been obvious to one of ordinary skill in the art to use platinum to fill the vias disclosed in Schulman '043 to form a conductive pathway through the structure that also forms a hermetic seal for the pathway.

Response to Arguments

12. Applicant's arguments filed on September 13, 2004 have been fully considered but they are not persuasive. With to the anticipation rejection over Schulman et al, Applicants argue that the amended claims distinguish over the Schulman reference because the amended claims require a hollow path formed from a first side of the substrate to a second side and is filled with

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an electrically conductive material. In response, the Examiner notes that the Schulman et al reference still anticipates the claimed invention. Schulman et al teach that the stair stepped vias pass through the substrate electrically connecting the electrode (sensor) with the electronic circuitry. Schulman et al teach that the vias are conductive. See col. 3, lines 26-44. Schulman et al describe the vias as a "feed through" meaning that there exists a path through the substrate, connecting the sensor side to the circuitry side. Schulman et al further describe the vias as "conductive", meaning that the vias are filled with a conductive material so as to provide an electrical connection from one side of the substrate to the other. It is noted that Applicants argue that "stair stepped" vias are more complex, however, the claimed "hollow path" does not distinguish over the stair stepped vias taught by Schulman et al, since the turn hollow is inherent in the reference's teaching of "via" and "feed through".

Applicants' further argue that new claims 32-34 further distinguish the present claims over Schulman et al. The Examiner disagrees. The use of the phrase "extend without interruption" does not sufficiently distinguish over Schulman et al. Although the vias of Schulman et al are "stair stepped", they still provide a full pathway from one side of the substrate to the other, i.e. there is not disruption in the electrical connection where the stair stepped vias are used.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until

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after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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